UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,452	10/23/2000	Michael Thomas Brady	BLD9-2000-0056US1	9596

7590   10/22/2003

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EXAMINER
NGO, CHUONG D

ART UNIT	PAPER NUMBER
2124	14

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/694,452	BRADY ET AL.
		Examiner	Art Unit
		Chuong D Ngo	2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 September 2003</u> .

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-49</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-49</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: .

DETAIL OF ACTION

1.   Claims 1-11 and 36-49 stand rejected under 35 U.S.C. 102(b) as being clearly anticipated

by Dierke (5,854,757).

Dierke discloses in cols. 3-7 a fast discrete cosine transform including arranging

transform equations into at least one collection (transform matrix T) of at least two discrete

transform equations (each row of the transform matrix corresponding to a discrete transform

equations) and having at least two transform constants, and independently scaling the transform

constants for each collection with a scaling term (S). The scaling terms are chosen to simplify

the transform equations and enable the scaled transform constants (N) to be represented by sums

of power of 2 terms inherently with an error within a predetermined error allowance.

2.   Claims 12-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Dierke

(5,854,757).

It is noted that Dierke does not disclose a use of the data processing in a data

compression system, especially in a printer. However, since the use of discrete cosine transform

in a compression system is well-known in the art, a person of ordinary skill in the art would have

found it an obvious application to use the discrete cosine transform as taught by Dierke in a data

compression system and in a printer as claimed in order to reduce circuitry and processing time.

3.   Claims 1-49 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pineda

(5,701,263) in view of Mattela et al. (5,781,239).

As per claims 1-11 and 36-49, Pineda discloses in cols. 3-5 a fast discrete cosine

transform processing including arranging transform equations into at least one collection

(transform matrix) of at least two discrete transform equations (each row of the transform matrix

corresponding to a discrete transform equations) and having at least two transform constants, and

independently scaling the transform constants for each collection with a scaling term (Pu). The

scaling terms are chosen inherently according to a predetermined cost function. It is noted that

Pineda does not disclose the scaled transform constants (Txu) represented by sums of power of 2

terms. However, Mattela el al. suggests in figure 16 and in col. 15, lines 50 - col. 16 line 18 the

representations of the scaled transform constants by sums of power of 2 terms in order to

perform multiplications by simple shift/add operations.   Thus it would have been obvious to a

person of ordinary skill in the art to represent the scaled transform constants (Txu) of Pineda by

sums of power of 2 terms for performing multiplications by simple shift/add operations as taught

by Pineda in order to reduce circuitry and processing time.

As per claims 12-35, the combination of Pineda and Mattela et al. do not disclose a use of

the discrete cosine transform processing in a data compression system, especially in a printer.

However, since the use of data transform in a compression system is well-known in the art, a

person of ordinary skill in the art would have found it an obvious application to use the data

processing as taught by combined references in a data compression system and in a printer as

claimed in order to reduce circuitry and processing time.

4.   Applicant's arguments filed 09-24-2003 have been fully considered but they are not

persuasive because the claims only require the transform equations to be arranged into at least

one collection of at least two discrete transform equations and each having at least two transform

constants. The applied references, as pointed out in the rejection, clearly arrange transform

equations into at least one collection (transform matrix) of at least two discrete transform

equations (each row of the transform matrix corresponding to a discrete transform equations) and

having at least two transform constants as claimed. Further, the recitation in the claims

"dividing each of the discrete cosine transform constants by one of the discrete cosine

transform constants from the at least one collection" do not require all the transform constants

in the collection to be scaled by the same constant. Indeed, the limitation only require each

discrete cosine transform constants to be scaled by one of the discrete cosine transform

constants in the collection. This requirement is clearly met by both Dierke and Pineda. In

Dierke, each constant elements in each equation row I (for I=0-7) of the collection matrix T is

divided by one element I of the vector S which is also a constant element of the collection

matrix T to obtain a scaled constant element of matrix N. Note a element I in vector S is a

constant element of the collection matrix T located in row I and at a column that the

corresponding element in Matrix N has a value 1. Similarly, In Pineda, the scaled transform

constants Txu (for x=0-7, u=0-7) are obtained by dividing each transform coefficient Cxu by

a scaling factor Pu; and each scaling factor Pu is also one of the transform coefficient Cxu

where the corresponding the scaled transform constants Txu has a value 1. Further, it should

be note that any number that represented in binary for digital processing is also represented in

sums of powers-of-2.

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
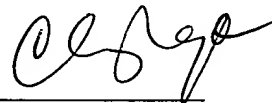
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until

after the end of the THREE-MONTH shortened statutory period, then the shortened statutory

period will expire on the date the advisory action is mailed, and any extension fee pursuant to

37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

6.   The text of those sections of Title 35, U.S. Code not included in this action can be

found in a prior Office action.

7.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Chuong D. Ngo whose telephone number is (703) 305-9764.
The examiner can normally be reached on Monday-Friday from 7:30 AM to 6:00 PM.

The fax phone number for the organization where this application or proceeding is
assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chuong D. Ngo
Primary Examiner
Art Unit 2124

10-17-2003